I&M proposals

Prairie Remnants Survey – Blackwater RNA

Most of the dry prairies (including herbaceous balds and bluffs) in the Lower Columbia and Lower Willamette River Valleys have been lost to development and/or agriculture, or the native vegetation community has been replaced with non-native pasture grasses. The Blackwater Island Research Natural Area (RNA) covers approximately 130 acres within the Ridgefield NWR and was established in 1972. Small patches of grassland occur on the RNA (approx.15 acres total) as small openings within oak woodland habitat. These grasslands are dominated by an introduced species (poverty brome), and the native grass component appears to be small. However some communities on basalt balds and outcrops appear to have a strong native plant component and some grassland habitat on the RNA appears to be an important area for native wildflowers. The basalt knobs in the RNA contain a rare plant community, Oregon white oak/oval-leaf viburnum/poison-oak woodland, which is classified as a Priority 2 ecosystem in the Washington Natural Heritage Plan. Soils on RNA grassland are thin, overlying basalt bedrock, and well drained. Inventories of the Blackwater Island RNA include vegetation surveys and community descriptions developed from the 1970s through the early 1990s, annual surveys for the federally listed Water Howellia, and pit trap and live trap mammal and amphibian surveys conducted in the 1990s.

The Refuge's CCP specifies that updated inventories of native habitats and vegetation, and habitat conditions (including presence of invasive species) are needed in order to manage grasslands and oak woodland habitat on the RNA, especially on balds and other drought-sensitive sites that may be affected by drier summers associated with short-term weather patterns such as La Nina/El Nino or longer term patterns associated climate change. The RNA also serves as a reference site for other restoration efforts on other natural resource areas State WMAs, NGO lands, NWRs, etc.

An updated vegetation survey and mapping effort would also be important for assessing the spread of reed canarygrass into ponds occupied by Howellia and developing a program to control reed canarygrass for the preservation of existing sites and the restoration of historic sites.

The Refuge is developing a geodatabase for use in storing mapping data and has sufficient GPS dataloggers to collect and store data. Additional funding would enable the refuge contractors and State Natural Heritage staff to document plant communities, map rare species and invasive species occurrences, and work with the refuge to develop weed control plans to protect listed species and rare communities. We estimate that two field seasons would be required and additional time required for data management. Recent aerial imagery would be used to identify communities and dense stands of invasive vegetation. This would be followed up with ground-truthing to fully characterize communities and fine tune invasive plant occurrences. Refuge staff and contractors, in consultation with regional biological staff and the Service's Endangered Species Program, would implement control efforts to protect native plant communities and listed species occurrences.

The Refuge and the Friends of Ridgefield National Wildlife Refuge have developed an extensive network of volunteers trained in locating and mapping invasive plants. We estimate that 200 hours of volunteer time would be available to assist in field efforts.

Staff (Contractor and STEP student May to October): $25,000 per year ($21,000 for contractor, $4,000 for STEP)

Supplies (fuel, field gear, equipment maintenance: $500.00 per year

Deliverables

The proposed project is designated as a necessary survey in the refuge's CCP. The initiation of the work schedule would depend on the timing of transfer of funds.

Delineation of invasive blackberry stands: STEP will use GPS to map existing stands of invasive Himalayan (Armenian) and evergreen blackberry within the RNA, focusing on areas on or near the balds. Initial work will focus on ground measurements unless a good aerial signature can be identified in which case mapping will be done remotely followed by ground-truthing at least 25% of stands. Information will be entered into the refuge's geodatabase. Work will commence once funds are transferred and priority site mapping will be completed by September 30, 2011.

Delineation of balds: STEP will use aerial imagery to identify boundaries of dry-site balds as described by Chappell (2006). Staff at the Washington Natural Heritage Program will be consulted to confirm delineation methods. Imagery interpretation will be followed by ground-truthing at least 30% of perimeter for priority bald sites focusing on forested areas where the boundary may be obscured. Proposed time August – September 30, 2011, when droughty conditions and plant senescence on the balds makes identification most accurate. Information will be entered into the refuge's geodatabase and will include slope, aspect and other pertinent site characteristics.

Map native shrubs on balds: To evaluate the lack of fire disturbance on the balds, the refuge STEP employee will map shrub cover (primarily native species) using GPS. Species will be identified in the field. Information will be entered into the refuge's geodatabase. This activity will be conducted July – September 30, 2011.

Relocate historic transects: In 1986, vegetation sampling transects were established on the RNA. The refuge STEP employee will locate as many of these transects as feasible in 2011 and if the exact transect cannot be relocated, the project will establish new transects in the approximate location of the 1986 transects in 2012.

Resurvey historic transects: Work will take place during the 2012 growing season by a refuge contractor and possibly a STEP student if funds are acquired by spring of 2012. Historic transects will be re-surveyed using similar sampling methods: Line intercept for shrub cover, % canopy cover estimates in 1m sq. plots and nested frequency in 10x10cm,

25x25cm, and 100x100cm subplots. The 1986 sample transect establishment report and sample data sheets in Refuge files will be used to repeat sampling at the same time of year, May of 2012.

Identify Plant Associations: Sample plots and community mapping will also be used to characterize the plant associations present on priority bald sites using Chappell's (2006) Key to Plant Associations, descriptions, and consultation with Washington Natural Heritage Program staff. If a community makes up more than 10% of a bald, then it will be mapped and the information entered into the refuge's geodatabase. Work will take place in 2012.

The presence and extent of State- or Federally-listed species will also be documented and mapped. Threats such as unnatural disturbance or invasive species encroachment will be identified and a strategy to address the threats developed. Work will take place in 2012.

Photomonitoring: Ten photomonitoring points will be established to document long-term change over time on priority grass bald sites and in the Howellia ponds. These will be established in 2012.

New Transects: If funding is available, two new plant community sampling transects would be established in 2013 on the two most significant bald sites, employing a sampling design developed in consultation with WNHP staff with advice from an expert monitoring consultant who has specialized in RNA vegetation monitoring under contract with the U.S. Forest Service, Research Natural Areas Program in Portland, Oregon.

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